This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A peptide, comprising the sequence $S_1 – S_2 – S_3 – S_4 – S_5$, wherein

S_1 comprises an amino acid chain from one to about four neutral or charged L- or D-configuration amino acid residues or a linear or branched alkyl, aryl, alkene, alkenyl or aralkyl chain;

S_2 is absent or is a natural or unnatural aliphatic amino acid residue;

S_3 is L- or D-Phe, Phe(4-Cl), Phe(2,4-diCl), Phe(3,4-diCl), Phe(4-NO_2), Phe(4-Me), Phe(4-Phenyl), Hphe, Pgl, Trp, Nal 1, Nal 2, Bip, Dip, Bpa, Ser(Bzl), Lys(Z), Lys(Z-2'Br), Lys(Bz), Thr(Bzl), Cys(Bzl), Tyr(BzlCl_2) or any natural or unnatural L- or D-amino acid with an aromatic side chain group, wherein the aromatic ring is optionally functionalized with halogen, alkyl or aryl groups;

S_4 is L- or D-Lys, Arg, Orn, Dpr, Dbu, p-amino-Phe or any natural or unnatural amino acid with a positively charged side chain;

S_5 comprises an L- or D-amino acid with an aromatic side chain.

2. (Original) The peptide of claim 1 wherein S_1 potentiates the intrinsic activity of the remainder of the peptide by providing an auxiliary or secondary receptor contact.

3. (Original) The peptide of claim 1 wherein S_1 comprises an acetyl group.

4. (Original) The peptide of claim 1 wherein S_2 is Gly or L- or D-Ala, Val, Leu or Nle.

5. (Original) The peptide of claim 1 wherein S_4 is an L-configuration cationic amino acid.

6. (Currently amended) The peptide of claim 1 wherein S_5 ~~the L- or D-amino acid with an aromatic side chain~~ is an L- or D-isomer of Phe, Phe(4-Cl), Phe(2,4-diCl), Phe(3,4-diCl), Phe(4-NO_2), Phe(4-Me), Phe(4-Phenyl), Hphe, Pgl, Trp, Nal 1, Nal 2, Bip, Dip, Bpa, Ser(Bzl),

Lys(Z), Lys(Z-2'Br), Lys(Bz), Thr(Bzl), Cys(Bzl), Tyr($BzlCl_2$), an N-alkylated or arylated derivative of any of the foregoing, or a des-carboxyl amino acid corresponding to any of the foregoing.

7. (Original) The peptide of claim 1 wherein S_5 comprises one or more additional amino acids.

8. (Original) The peptide of claim 1 wherein S_5 comprises a terminal group.

9. (Currently amended) A peptide, ~~comprising~~ consisting of the sequence $S_1 – S_2 –$ D-Phe(4-Cl) – $S_4 – S_5$, wherein

S_1 is heptanoyl, 2'-naphthylacetyl, 7'-amino-heptanoyl, 2'-chlorophenylacetyl, 3'-chlorophenylacetyl, 4'-chlorophenylacetyl, 4'-phenylbutylaminocarbonyl, 3'-phenylbutylaminocarbonyl, 4'-bromophenyl-acetyl, 3-4-dichlorophenyl-acetyl, 2,4-dichlorophenyl-acetyl, 4-biphenyl-acetyl, 2-naphthoyl, Ph-$(CH_2)_2NH$, 3'-phenylpropanecarbonyl, 2'-naphthoyl-Pip, 2'-naphthylacetyl, 2'-bromophenyl-acetyl, 4'-CF_3phenyl-acetyl, 3'-CF_3phenyl-acetyl, 2'-CF_3phenyl-acetyl, 3',5'-CF_3phenylacetyl, 2',5'-CF_3phenylacetyl, 4'-Mephenyl-acetyl, 3'-Mephenyl-acetyl, 2'-Mephenyl-acetyl, 7'-aminoheptonoyl, beta-Ala, 4-aminoBytyl, 5-aminoValeryl, 6-aminoCaproyl, aminoTranexamyl, Cmpi or 3',4'-Cl_2phenylacetyl;

S_2 is absent or is Ser(Bzl), Ala, D-Ala, beta-Ala, Val, Leu, Chg, Aib, Tle, 1-amino-1cyclohexanecarbonyl, Inp, $CO(CH_2)_2NH$, $CO(CH_2)_2CO$, Pip, MeThr(Bzl), Thr(Bzl) or D-Thr(Bzl);

S_4 is Arg, D-Arg, (Nlys)Gly, Trp, Lys, homoLys, Dpr(beta-Ala), alpha-(N-amidino-4'-piperidine)Gly, (4'-guanidino)Gly, (4'-guanidino)Phe, D-(4'-guanidino)Phe, beta-(N-amidino-4'-peperidine)Ala or homo-Ala-4'-pip(N-amidino); and

S_5 is Trp, Trp-OH, Trp-NH_2, Trp-Cys-NH_2, D-Trp, D-Trp-NH_2, Trp-Val-NH_2, 3'-Pya-NH_2, Phe-NH_2, MeTrp-NH_2, beta-Ala-Trp-NH_2, aminobutylamide, Nal 1-NH_2, D-Nal 1-NH_2, Nal 2-NH_2, D-Nal 2-NH_2, Tic-NH_2, D-Tic-NH_2, 1'-aminoindan, 1'-aminoindane-1-carboxyl-NH_2, Aic-NH_2, Atc-NH_2, Disc-NH_2, Tpi-NH_2, D-Tpi-NH_2, Tiq-NH_2, D-Tiq-NH_2, tryptamide, NMe-

tryptamide, alpha-Me-tryptamide, 2'-(4"-methylphenyl)ethylamide, 3',4'-Cl_2)phenylmethylamide, 3'-phenylpropylamide, 2',4'-dichlorobenzylamide, 3'-(1H-imidazol)propylamide, 4-phenyl-piperidine-4-carbonamide, 3-phenyl-1-propylamide, 2,4-dichlorophenethylamide, S-(-)-1-(2-naphthyl)ethylamide, S-(-)-1-(1-naphthyl)ethylamide, 2'-methylbenzylamide, 4'-methylbenzylamide, 2',2'-diphenylethylamide, 1-(2-pyridyl)piperazine, N-benzylmethylamide, histamide, R-(+)-1-(2-Naphthyl)ethylamide, Trp-Asp-NH_2, Trp-Asp-Phe-NH_2, Asp-Trp-NH_2, Ala-Trp-NH_2, Trp-Ala-NH_2, phenethylamide or Trp-Asp-OH.

10. (Original) The peptide of claim 9 consisting of the sequence:

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Ala-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Asp-Phe-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Asp-NH_2,

heptanoyl-Thr(Bzl)-D-Phe(4-Cl)-Arg-Trp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-MeTrp-NH_2,

heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-MeTrp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-NMe-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-alpha-Me-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-S-(-)-1-(1-Naphthyl)ethylamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Nal 1-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-D-Nal 2-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Nal 2-NH_2,

2'-naphthylacetyl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2,

4'phenylbutyryl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2,

3',4'-dichlorophenyl-acetyl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2, or

3'-CF_3phenyl-acetyl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2.

11. (Original) A peptide, ~~comprising~~ consisting of the sequence 7'-amino-heptanoyl – S_2 – D-Phe(4-Cl) – S_4 – S_5, wherein

S_2 is absent or is Ser(Bzl), Ala, D-Ala, beta-Ala, Val, Leu, Chg, Aib, Tle, 1-amino-1cyclohexanecarbonyl, Inp, $CO(CH_2)_2NH$, $CO(CH_2)_2CO$, Pip, MeThr(Bzl), Thr(Bzl) or D-Thr(Bzl);

S_4 is Arg, D-Arg, (Nlys)Gly, Trp, Lys, homoLys, Dpr(beta-Ala), alpha-(N-amidino-4'-piperidine)Gly, (4'-guanidino)Gly, (4'-guanidino)Phe, D-(4'-guanidino)Phe, beta-(N-amidino-4'-peperidine)Ala or homo-Ala-4'-pip(N-amidino); and

S_5 is Trp, Trp-OH, Trp-NH_2, Trp-Cys-NH_2, D-Trp, D-Trp-NH_2, Trp-Val-NH_2, 3'-Pya-NH_2, Phe-NH_2, MeTrp-NH_2, beta-Ala-Trp-NH_2, aminobutylamide, Nal 1-NH_2, D-Nal 1-NH_2, Nal 2-NH_2, D-Nal 2-NH_2, Tic-NH_2, D-Tic-NH_2, 1'-aminoindan, 1'-aminoindane-1-carboxyl-NH_2, Aic-NH_2, Atc-NH_2, Disc-NH_2, Tpi-NH_2, D-Tpi-NH_2, Tiq-NH_2, D-Tiq-NH_2, tryptamide, NMe-tryptamide, alpha-Me-tryptamide, 2'-(4"-methylphenyl)ethylamide, 3',4'-Cl_2)phenylmethylamide, 3'-phenylpropylamide, 2',4'-dichlorobenzylamide, 3'-(1H-imidazol)propylamide, 4-phenyl-piperidine-4-carbonamide, 3-phenyl-1-propylamide, 2,4-dichlorophenethylamide, S-(-)-1-(2-naphthyl)ethylamide, S-(-)-1-(1-naphthyl)ethylamide, 2'-methylbenzylamide, 4'-methylbenzylamide, 2',2'-diphenylethylamide, 1-(2-pyridyl)piperazine, N-benzylmethylamide, histamide, R-(+)-1-(2-Naphthyl)ethylamide, Trp-Asp-NH_2, Trp-Asp-Phe-NH_2, Asp-Trp-NH_2, Ala-Trp-NH_2, Trp-Ala-NH_2, phenethylamide or Trp-Asp-OH.

12. (Original) The peptide of claim 11 consisting of the sequence

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Ala-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Asp-Phe-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Asp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-MeTrp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-NMe-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-alpha-Me-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-S-(-)-1-(1-Naphthyl)ethylamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Nal 1-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-D-Nal 2-NH_2, or

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Nal 2-NH_2.

13. (Original) A peptide, ~~comprising~~ consisting of the sequence $S_1 – S_2 – S_3 – S_4 – S_5$, wherein

S_1 is heptanoyl, 2'-naphthylacetyl, 7'-amino-heptanoyl, 2'-chlorophenylacetyl, 3'-chlorophenylacetyl, 4'-chlorophenylacetyl, 4'-phenylbutylaminocarbonyl, 3'-phenylbutylaminocarbonyl, 4'-bromophenyl-acetyl, 3-4-dichlorophenyl-acetyl, 2,4-dichlorophenyl-acetyl, 4-biphenyl-acetyl, 2-naphthoyl, Ph-$(CH_2)_2$NH, 3'-phenylpropanecarbonyl, 2'-naphthoyl-Pip, 2'-naphthylacetyl, 2'-bromophenyl-acetyl, 4'-CF_3phenyl-acetyl, 3'-CF_3phenyl-acetyl, 2'-CF_3phenyl-acetyl, 3',5'-CF_3phenylacetyl, 2',5'-CF_3phenylacetyl, 4'-Mephenyl-acetyl, 3'-Mephenyl-acetyl, 2'-Mephenyl-acetyl, 7'-aminoheptonoyl, beta-Ala, 4-aminoBytyl, 5-aminoValeryl, 6-aminoCaproyl, aminoTranexamyl, Cmpi or 3'4'-Cl_2phenylacetyl;

S_2 is absent or is Ser(Bzl), Ala, D-Ala, beta-Ala, Val, Leu, Chg, Aib, Tle, 1-amino-1cyclohexanecarbonyl, Inp, $CO(CH_2)_2$NH, $CO(CH_2)_2$CO, Pip, MeThr(Bzl), Thr(Bzl) or D-Thr(Bzl);

S_3 is Phe, D-Phe, Phe(4-Cl), D-Phe(4-Cl), Phe(3-Cl), D-Phe(3-Cl), Phe(2-Cl), D-Phe(2-Cl), D-Phe(3,4-diCl), MePhe, D-MePhe, D-Tic, D-Tpi, D-Nal 2, Arg, D-Phe(3,4-F_2), D-Tiq, D-Me(homo)Phe or D-EtPhe;

S_4 is Arg, D-Arg, (Nlys)Gly, Trp, Lys, homoLys, Dpr(beta-Ala), alpha-(N-amidino-4'-piperidine)Gly, (4'-guanidino)Gly, (4'-guanidino)Phe, D-(4'-guanidino)Phe, beta-(N-amidino-4'-peperidine)Ala or homo-Ala-4'-pip(N-amidino); and

S_5 is Trp, Trp-OH, Trp-NH_2, Trp-Cys-NH_2, D-Trp, D-Trp-NH_2, Trp-Val-NH_2, 3'-Pya-NH_2, Phe-NH_2, MeTrp-NH_2, beta-Ala-Trp-NH_2, aminobutylamide, Nal 1-NH_2, D-Nal 1-NH_2, Nal 2-NH_2, D-

Nal 2-NH_2, Tic-NH_2, D-Tic-NH_2, 1'-aminoindan, 1'-aminoindane-1-carboxyl-NH_2, Aic-NH_2, Atc-NH_2, Disc-NH_2, Tpi-NH_2, D-Tpi-NH_2, Tiq-NH_2, D-Tiq-NH_2, tryptamide, NMe-tryptamide, alpha-Me-tryptamide, 2'-(4"-methylphenyl)ethylamide, 3',4'-Cl_2)phenylmethylamide, 3'-phenylpropylamide, 2',4'-dichlorobenzylamide, 3'-(1H-imidazol)propylamide, 4-phenyl-piperidine-4-carbonamide, 3-phenyl-1-propylamide, 2,4-dichlorophenethylamide, S-(-)-1-(2-naphthyl)ethylamide, S-(-)-1-(1-naphthyl)ethylamide, 2'-methylbenzylamide, 4'-methylbenzylamide, 2',2'-diphenylethylamide, 1-(2-pyridyl)piperazine, N-benzylmethylamide, histamide, R-(+)-1-(2-Naphthyl)ethylamide, Trp-Asp-NH_2, Trp-Asp-Phe-NH_2, Asp-Trp-NH_2, Ala-Trp-NH_2, Trp-Ala-NH_2, phenethylamide or Trp-Asp-OH.

14. (Original) The peptide of claim 13 consisting of the sequence

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Ala-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Asp-Phe-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-Asp-NH_2,

heptanoyl-Thr(Bzl)-D-Phe(4-Cl)-Arg-Trp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Nal 2-Arg-Trp-NH_2,

7'-amino-heptanoyl-Ala-D-Nal 2-Arg-Trp-NH_2,

Ser(Bzl)-D-Nal 2-Arg-Trp-NH_2,

Ser(Bzl)-D-Nal 2-Arg-D-Trp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-MeTrp-NH_2,

heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-MeTrp-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-NMe-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-alpha-Me-Tryptamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-S-(-)-1-(1-Naphthyl)ethylamide,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Nal 1-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-D-Nal 2-NH_2,

7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Nal 2-NH_2,

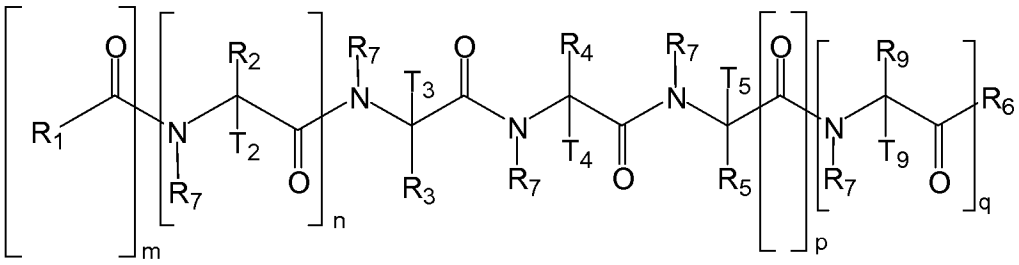
2'-naphthylacetyl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2,

4'phenylbutyryl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2,

3',4'-dichlorophenyl-acetyl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2, or

3'-CF_3phenyl-acetyl-Ala-D-Phe(4-Cl)-Arg-Trp-NH_2.

15. (Withdrawn-currently amended) A melanocortin receptor-specific linear peptide of the formula:



where:

R_1 is an aliphatic L- or D-amino acid, N-acylated L- or D-aliphatic amino acid or R_8;

R_8 is independently selected from the group consisting of linear or branched C_1 to C_{17} alkyl, aryl, heteroaryl, alkene, alkenyl, or aralkyl chains;

R_2 and R_3 are each independently H, CH_3, or an aromatic substituent aryl or heteroaryl side chain of a natural or synthetic L- or D-amino acid containing at least one aromatic ring moiety, wherein the ring(s) may additionally be functionalized by one or more halogen, alkyl or aryl groups;

R_4 is a positively charged aliphatic or aromatic side chain of a natural or synthetic L- or D-amino acid, wherein the chain comprises at least one nitrogen-containing group, or is a neutral aliphatic side chain having hydrogen donors and/or acceptors;

R_5 is H, CH_3, an aromatic substituent aryl or heteroaryl side chain of a natural or synthetic

L- or D-amino acid containing at least one aromatic right moiety wherein the ring(s) may additionally be functionalized by one or more halogen, alkyl or aryl groups, or a substituent alkyl or hydrogen bonding polar side chain of a natural or synthetic L- or D-amino acid wherein the side chain has a hydrogen donor or acceptor moiety;

R_6 is hydroxide, NH_2, or NH-R_8;

R_7 is H, methyl, ethyl, propyl, butyl, or a higher linear or branched chain terminating in an amino group, benzyl, or aralkyl group;

R_9 is H or an amino acid side chain group;

m is ~~normally 1~~ 1 or 0, with the proviso that if m is 0 then ~~m may be 0 in which case~~ this functionality is not present and the N-terminal group is an amine;

n is ~~normally 1~~ 1 or 0, with the proviso that if n is 0 then ~~m may be 0 in which case~~ this amino acid is not present;

p is ~~normally 1~~ 1 or 0 with the proviso that when p is 0 the chain terminates with the combination of R_5 and T_5 and there is no q and no R_6;

q is ~~normally 1~~ 1 or 0 with the proviso that when q is 0 and p is 1 then the terminal group is R_6; and

T_2, T_3, T_4, T_5, and T_9 are each H, CH_3, C_2H_5 or a benzyl group;

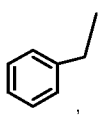
provided that one or more of the pairs R_2 and T_2, or R_3 and T_3, or R_4 and T_4, or R_5 and T_5, or R_9 and T_9 moieties may be joined together by additional carbon-carbon bonds to form a five-, six- or seven-membered ring structure; and

further provided that one or more of R_2, R_4, R_5 or R_9 may be joined to the R_7 group that immediately precedes such R_2, R_4, R_5 or R_9 group by additional carbon-carbon bonds to form a five-, six- or seven-membered ring structure, thereby fixing such R_2, R_4, R_5 or R_9 group to the immediately preceding nitrogen atom.

16. (Withdrawn) The linear peptide of claim 15 wherein R_8 is a C_1 to C_{17} aliphatic linear chain or branched chain group, an acylated group derived from C_1 to C_{17} aliphatic linear chain or branched chain group, an omega amino and carboxylic derivative of a C_1 to C_{17} aliphatic linear chain or branched chain groups, or an omega amino derivative of an acylated group

derived from a C_1 to C_{17} aliphatic linear chain or branched chained group.

17. (Withdrawn) The linear peptide of claim 15 wherein at least one of R_2 and R_3 are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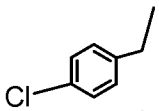

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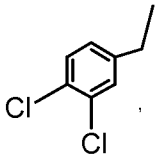

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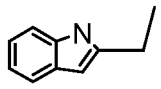

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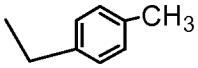

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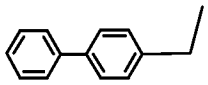
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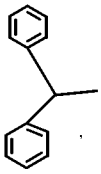
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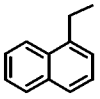
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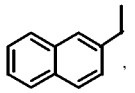
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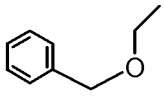

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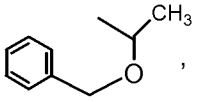

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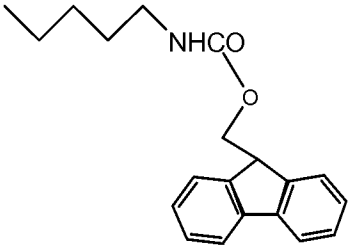

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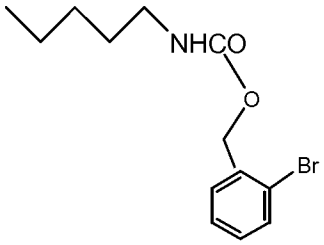

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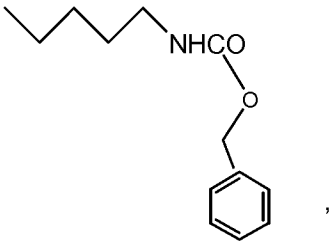

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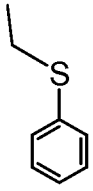

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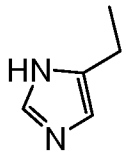

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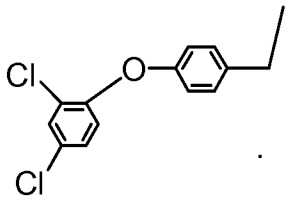

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18. (Withdrawn) The peptide of claim 15 wherein R_4 is a positively charged aliphatic or aromatic side chain of a natural or synthetic L- or D-amino acid, wherein the at least one nitrogen-containing group in the chain is an amide, imide, amine or nitrile.

19. (Withdrawn) The peptide of claim 15 wherein R_4 is


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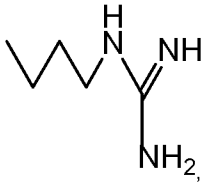
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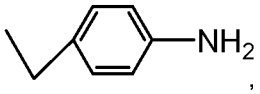
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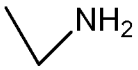
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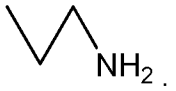
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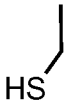
20. (Withdrawn) The peptide of claim 15 wherein R_4 is a neutral aliphatic side chain having hydrogen donors and/or acceptors comprising: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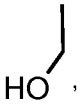
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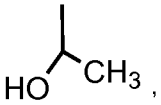
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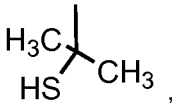
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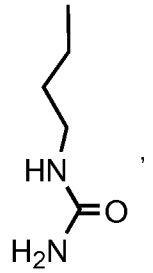
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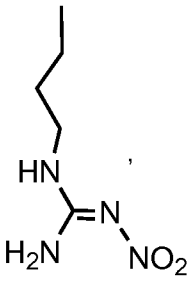
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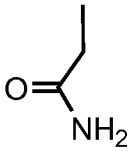
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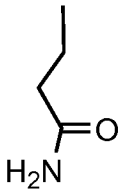
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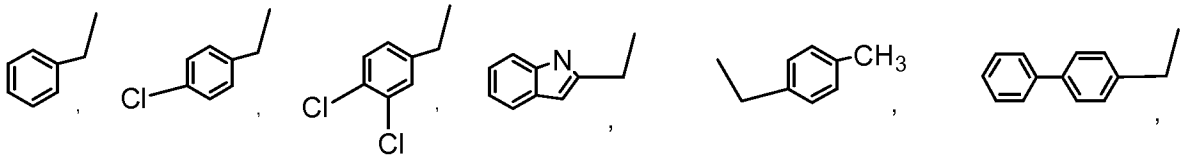
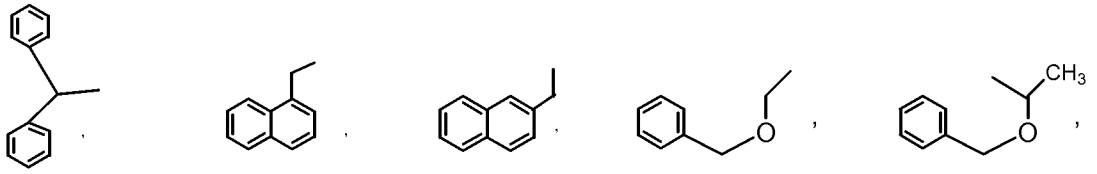
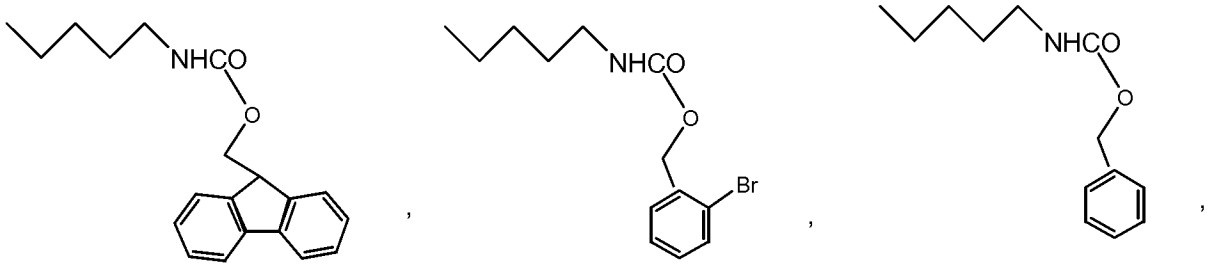
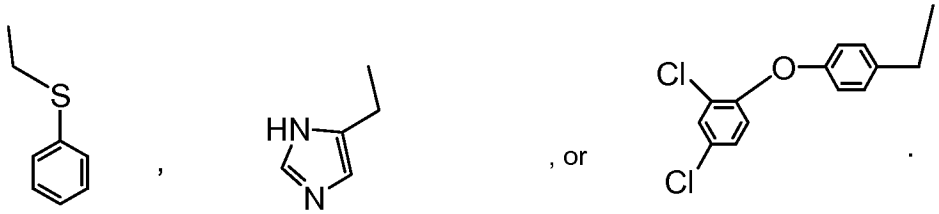
21. (Withdrawn) The peptide of claim 15 wherein R_5 is



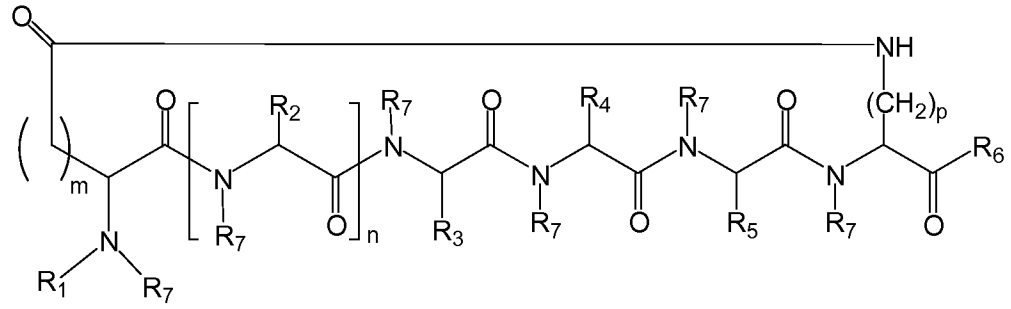






22. (Withdrawn) The peptide of claim 15 wherein R_9 is methyl, ethyl, propyl, butyl, a higher linear or branched chain, or a linear chain terminating in an amino group, benzyl, or aralkyl group.

23. (Withdrawn-currently amended) A melanocortin receptor-specific cyclic peptide of the formula:



where:

R_1 is H, an aliphatic L- or D-amino acid, N-acylated aliphatic L- or D-amino acid or R_8;

R_2, R_3 and R_5 are independently each H, CH_3, an aromatic substituent aryl or heteroaryl side chain of a natural or synthetic L- or D-amino acid containing at least one aromatic moiety, wherein the ring(s) may additionally be functionalized by halogen, alkyl or aryl groups;

R_4 is a positively charged aliphatic or aromatic side chain of a natural or synthetic L- or D-amino acid, wherein the chain comprises at least one nitrogen-containing group, or is a neutral aliphatic side chain having hydrogen donors and/or acceptors;

R_6 is hydroxide, NH_2, or NH-R_8;

R_7 is H, methyl, ethyl, propyl, butyl, a higher linear or branched chain homolog, or a chain terminating in an amino group, benzyl, or aralkyl group;

R_8 is, in each instance, independently a linear or branched C_1 to C_{17} alkyl, aryl, heteroaryl, alkene, alkenyl, or aralkyl chain;

m is 1 or 2;

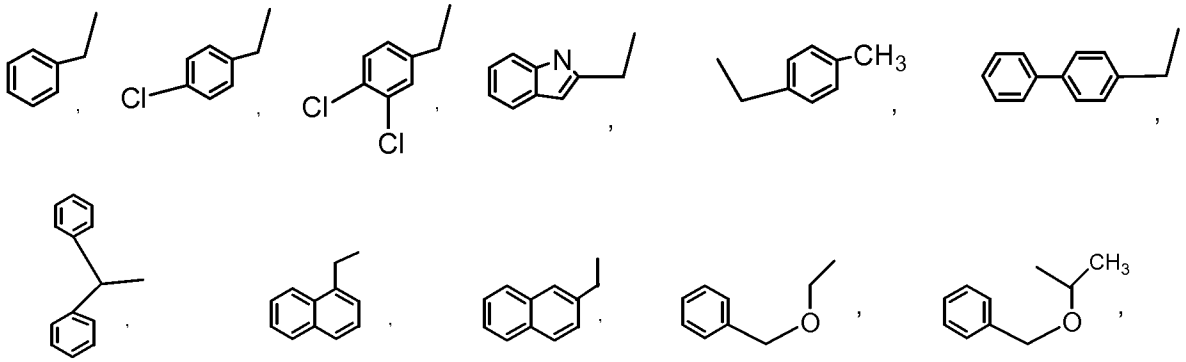
n is ~~normally 1~~ 1 or 0 with the proviso that if n is 0 then ~~n may be 0 in which case~~ this amino acid is not present; and

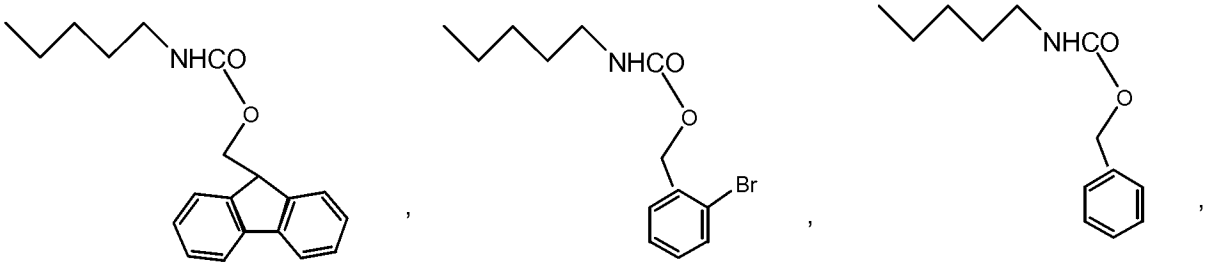
p is 1 to 5.

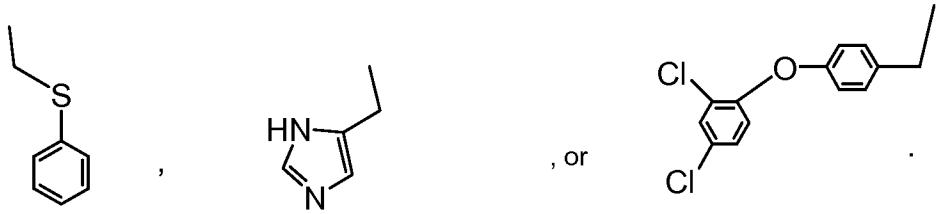
24. (Withdrawn) The cyclic peptide of claim 23 wherein R_8 is a C_1 to C_{17} aliphatic

linear chain or branched chain group, an acylated group derived from C_1 to C_{17} aliphatic linear chain or branched chain group, an omega amino and carboxylic derivative of a C_1 to C_{17} aliphatic linear chain or branched chain groups, or an omega amino derivative of an acylated group derived from a C_1 to C_{17} aliphatic linear chain or branched chained group.

25. (Withdrawn) The cyclic peptide of claim 23 wherein at least one of R_2, R_3 or R_6 are independently



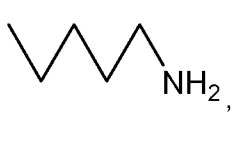
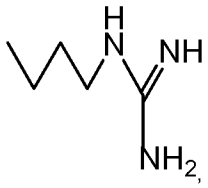
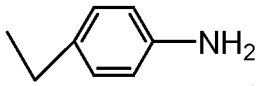


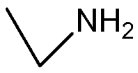
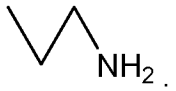


26. (Withdrawn) The cyclic peptide of claim 23 wherein R_4 is a positively charged aliphatic or aromatic side chain of a natural or synthetic L- or D-amino acid, wherein the at least

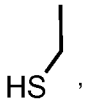
one nitrogen-containing group in the chain is an amide, imide, amine or nitrile.

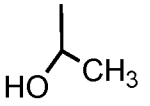
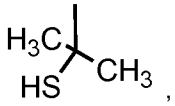
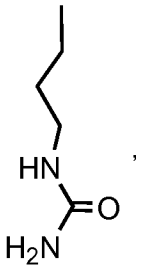
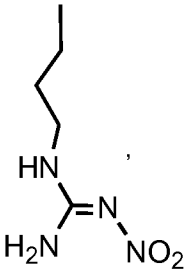
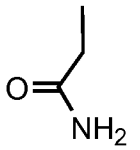
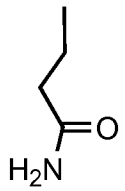
27. (Withdrawn) The cyclic peptide of claim 23 wherein R_4 is

28. (Withdrawn) The cyclic peptide of claim 23 wherein R_4 is a neutral aliphatic side chain having hydrogen donors and/or acceptors comprising:



29. (Withdrawn) A method of stimulating sexual response in a mammal, comprising administering a pharmaceutically sufficient amount of a melanocortin receptor 3 and/or 4 selective agonist peptide of any of the foregoing claims.

30. (Withdrawn) The method of claim 29 comprising a method of administration selected from the group consisting of intravenous, subcutaneous, intramuscular, parenteral, intranasal, oral, dermal, inhalation, buccal, pulmonary, ocular, sublingual and vaginal administration.

31. (Withdrawn) A method of decreasing food intake in a mammal, comprising administering a pharmaceutically sufficient amount of a melanocortin receptor 4 and/or 5 selective agonist peptide of any of claims 1 to 28.

32. (Withdrawn) The method of claim 31 comprising a method of administration selected from the group consisting of intravenous, subcutaneous, intramuscular, parenteral, intranasal, oral, dermal, inhalation, buccal, pulmonary, ocular, sublingual and vaginal administration.

33. (Original) A peptide of the sequence 7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-NH_2.

34. (Original) A pharmaceutical composition comprising a peptide of the sequence 7'-amino-heptanoyl-Ser(Bzl)-D-Phe(4-Cl)-Arg-Trp-NH_2.